What is claimed is:

1. A liquid crystal display device in which vertically aligned liquid crystal is sealed between a pair of substrates, comprising:

cell gap adjusting spacers formed on at least one of the pair of substrates, for maintaining a cell gap constant; and

domain defining projections formed on a substrate side, to which the spacers are formed, with same material as the spacers by same steps to have a height lower than the spacers.

2. A method of manufacturing a liquid crystal display device in which vertically aligned liquid crystal is sealed between a pair of substrates, comprising:

a photoresist film forming step of forming a photoresist film on one substrate;

an exposing step of transferring a spacer pattern and a projection pattern onto the photoresist film while using a mask having the spacer pattern and the projection pattern under conditions that provide different remaining parts of the photoresist film thicknesses after development; and

a developing step of forming simultaneously cell gap adjusting spacers corresponding to the spacer pattern and domain defining projections corresponding to the projection pattern by developing the photoresist film.

3. A method of manufacturing a liquid crystal

display device according to claim 2, further comprising:

a post-baking step conducted after the developing step.

4. A method of manufacturing a liquid crystal display device according to claim 2, wherein an amount of exposure in a spacer forming region and an amount of exposure in a projection forming region are set differently in the developing step.

5. A method of manufacturing a liquid crystal display device according to claim 2, wherein a light transmittance of the spacer pattern of the mask and a light transmittance of the projection pattern of the mask are different.

6. A method of manufacturing a liquid crystal display device according to claim 2, wherein an amount of exposure in a spacer forming region and an amount of exposure in a projection forming region are set differently by executing plural times the exposure in the developing step while shifting the mask in a direction in parallel with the photoresist film.

7. A method of manufacturing a liquid crystal display device according to claim 2, wherein an amount of exposure in a spacer forming region and an amount of exposure in a projection forming region are set differently by utilizing a diffraction light.

8. A color filter substrate for a liquid crystal display device, comprising:

a substrate;

a plurality of color filters formed on the substrate to exhibit a plurality of colors;

a common electrode formed on the color filters;

cell gap adjusting spacers formed on the common electrode; and

domain defining projections formed on the common electrode with same material as the cell gap adjusting spacers by same steps to have a height lower than the cell gap adjusting spacers.

9. A method of manufacturing a color filter substrate for a liquid crystal display device, comprising the steps of:

forming color filters that exhibit a plurality of colors on a substrate;

forming a common electrode made of transparent conductor on the color filters;

forming a photoresist film on the common electrode;

transferring a spacer pattern and a projection pattern onto the photoresist film while using a mask having the spacer pattern and the projection pattern under conditions that provide different remaining parts of the photoresist film thicknesses after development; and

forming simultaneously cell gap adjusting spacers corresponding to the spacer pattern and domain defining projections corresponding to the projection pattern by developing the photoresist film.

10. A method of manufacturing a liquid crystal display device in which vertically aligned liquid crystal is sealed between a pair of substrates, comprising the steps of:

a photoresist film forming step of forming a photoresist film on one substrate;

an exposing step of transferring a spacer pattern and a projection pattern onto the photoresist film while using a mask having the spacer pattern and the projection pattern in which a width is narrower than the spacer pattern;

a developing step of forming simultaneously cell gap adjusting spacers corresponding to the spacer pattern and domain defining projections corresponding to the projection pattern by developing the photoresist film; and

a post-baking step of post-baking the developed photoresist film such that a height of the domain defining projections is reduced lower than a height of the cell gap adjusting spacers.

11. A method of manufacturing a color filter substrate for a liquid crystal display device, comprising the steps of:

forming color filters that exhibit a plurality of colors on a substrate;

forming a common electrode made of transparent conductor on the color filters;

forming a photoresist film on the common electrode;

transferring a spacer pattern and a projection pattern onto the photoresist film while using a mask having the spacer pattern and the projection pattern in which a width is narrower than the spacer pattern;

forming simultaneously cell gap adjusting spacers corresponding to the spacer pattern and domain defining projections corresponding to the projection pattern by developing the photoresist film; and

post-baking the developed photoresist film such that a height of the domain defining projections is reduced lower than a height of the cell gap adjusting spacers.

12. A method of manufacturing a liquid crystal display device comprising the steps of:

forming color filters on a first substrate;

forming an electrode made of transparent conductor on the color filters;

forming a photoresist film on the electrode;

forming simultaneously cell gap adjusting spacers and domain defining projections whose height is lower than the cell gap adjusting spacers by exposing the photoresist film and then developing it;

forming a first alignment film on an upper surface side of the first substrate; and

jointing a second substrate, on which pixel electrodes and a second alignment film are formed, to the first substrate, and then sealing liquid crystal between the first substrate and the second substrate.

13. A liquid crystal display device in which a black matrix is formed by laminating more than two color filters out of red, green, and blue color filters on a substrate, comprising:

a structure for deciding edges of more than two pixels out of a red pixel, a green pixel, and a blue pixel by an edge of an overlying color filter.

14. A liquid crystal display device according to claim 13, wherein an edge of the green pixel is decided by an edge of a red color filter formed on a green color filter, an edge of the red pixel is decided by an edge of a blue color filter formed on the red color filter, and an edge of the blue pixel is decided by an edge of the first layer green color filter.

15. A liquid crystal display device according to claim 13, wherein an edge of the green pixel is decided by an edge of a blue color filter formed on a green color filter, an edge of the red pixel is decided by an edge of a blue color filter formed on the red color filter, and an edge of the blue pixel is decided by an edge of the first layer green color filter.

16. A color filter substrate for a liquid crystal display device, comprising:

a substrate;

a red color filter formed in a red pixel region on the substrate, a green color filter formed in a green pixel region, and a blue color filter formed in a blue pixel

region; and

a black matrix formed by laminating at least two color filters out of the red color filter, the green color filter, and the blue color filter, and arranged in regions between pixels on the substrate;

wherein edges of the red pixel region, the green pixel region, and the blue pixel region are decided by an edge of an overlying color filter out of color filters constituting the black matrix.

17. A method of manufacturing a liquid crystal display device comprising the steps of:

forming a first color filter in a first color pixel region and a black matrix forming region on a substrate;

forming a second color filter in a second color pixel region and the black matrix forming region on the substrate to decide an edge of the first color pixel region by an edge of the second color filter; and

forming a third color filter in a third color pixel region and the black matrix forming region on the substrate to decide an edge of the second color pixel region by an edge of the third color filter and decide an edge of the third color pixel region by an edge of the first color filter.

18. A method of manufacturing a liquid crystal display device according to claim 17, wherein the substrate is formed of material that has ultraviolet-ray absorbing capability higher than a glass.

19. A method of manufacturing a liquid crystal display device according to claim 17, wherein ultraviolet-ray absorbing material is added to at least one of the first color filter and the second color filter.

20. A method of manufacturing a liquid crystal display device according to claim 17, wherein a film made of material that has excellent ultraviolet-ray absorbing capability rather than material of the substrate is formed on a surface of the substrate.

21. A method of manufacturing a color filter substrate for a liquid crystal display device, comprising the steps of:

forming a first color filter in a first color pixel region and a black matrix forming region on a substrate;

forming a second color filter in a second color pixel region and the black matrix forming region on the substrate to decide an edge of the first color pixel region by an edge of the second color filter;

forming a third color filter in a third color pixel region and the black matrix forming region on the substrate to decide an edge of the second color pixel region by an edge of the third color and decide an edge of the third color pixel region by an edge of the first color filter; and

forming a common electrode made of transparent conductor on the color filters.

22. A liquid crystal display device in which liquid

crystal is sealed between a pair of substrates,

wherein first spacers for deciding a cell gap between the substrates in a normal state and second spacers having a height lower than the first spacers are provided between the pair of substrates.

23. A liquid crystal display device according to claim 22, wherein the first spacers and the second spacers are formed of materials each having a different compressive displacement.

24. A liquid crystal display device in which liquid crystal is sealed between a pair of substrates,

wherein spacers for deciding a cell gap between the pair of substrates are constructed by laminating a plurality of films each having a different compressive displacement.

25. A method of manufacturing a liquid crystal display device comprising the steps of:

forming a first photoresist film on a first substrate, and then forming selectively first spacers in regions between pixels by exposing and developing the first photoresist film;

forming a second photoresist film on the first substrate, and then forming second spacers having a height different from the first spacers in regions, which are located between pixels and in which the first spacers are not formed, by exposing and developing the second photoresist film; and

jointing the first substrate and a second substrate to bring top end portions of any one of the first spacers and the second spacers into contact with the second substrate, and then sealing liquid crystal between both substrates.

26. A method of manufacturing a liquid crystal display device comprising the steps of:

forming spacers by laminating a plurality of films, which are formed of materials each having a compressive displacement, in regions between pixels on a first substrate;

jointing the first substrate and a second substrate to bring top end portions of the spacers into contact with the second substrate, and then sealing liquid crystal between both substrates.

27. A method of manufacturing a liquid crystal display device comprising the steps of:

forming a black matrix and color filters on a first substrate;

forming a first photoresist film on an overall upper surface of the first substrate, then forming domain defining projections on the color filters by exposing and developing the first photoresist film, and then forming selectively a resist resin film over the black matrix;

forming a second photoresist film on an overall upper surface of the first substrate, then forming first spacers made of the second photoresist film over the black matrix

by exposing and developing the second photoresist film, and then forming second spacers made of the resist resin film and the second photoresist film formed on the resist resin film; and

jointing the first substrate and a second substrate to bring top end portions of the second spacers into contact with the second substrate, and then sealing liquid crystal between both substrates.

28. A method of manufacturing a liquid crystal display device according to claim 27, wherein the black matrix is formed by laminating color filters for more than two colors.

29. A method of manufacturing a color filter substrate for a liquid crystal display device, comprising the steps of:

forming a black matrix and color filters on a substrate;

forming a first photoresist film on an overall upper surface of the substrate, then forming domain defining projections on the color filters by exposing and developing the first photoresist film, and then forming selectively a resist resin film over the black matrix; and

forming a second photoresist film on an overall upper surface of the substrate, then forming first spacers made of the second photoresist film over the black matrix by exposing and developing the second photoresist film, and then forming second spacers made of the resist resin film

and the second photoresist film formed on the resist resin film.

30. A method of manufacturing a liquid crystal display device comprising the steps of:

forming a black matrix on a first substrate;

forming color filters in pixel portions on the first substrate, and also forming the color filters only in predetermined regions of the black matrix;

forming a photoresist film on an overall upper surface of the first substrate, and then forming spacers on the color filters, which are laminated on the black matrix, and the black matrix, on which the color filters are not laminated, respectively by exposing and developing the photoresist film; and

jointing the first substrate and a second substrate to bring top end portions of the spacers formed on the color filters into contact with the second substrate, and then sealing liquid crystal between both substrates.

31. A method of manufacturing a color filter substrate for a liquid crystal display device, comprising the steps of:

forming a black matrix on a substrate;

forming color filters in pixel portions on the substrate, and also forming the color filters only in predetermined regions of the black matrix; and

forming a photoresist film on an overall upper surface of the substrate, and then forming spacers on the

color filters, which are laminated on the black matrix, and the black matrix, on which the color filters are not laminated, respectively by exposing and developing the photoresist film.

32. A liquid crystal display device, comprising:

a pair of substrates;

a plurality of spacers interposed between the pair of substrates to form a clearance between the pair of substrates; and

liquid crystal sealed between the pair of substrates;

wherein the spacers are formed to satisfy a following inequality,

$x/d>(1/q_{60}-1/q_{-20})/(1/q_{60})$

where a distribution density of the spacers is n (cm^{-2}), an amount of displacement when a force of 9.8/n (N) is applied to one spacer is x, an average distance between the pair of substrates is d, a density of the liquid crystal at 60 ℃ is q_{60} (g/cm^3), and the density of the liquid crystal at -20 ℃ is q_{-20} (g/cm^3).

33. A liquid crystal display device, comprising:

a pair of substrates;

a plurality of spacers interposed between the pair of substrates to form a clearance between the pair of substrates; and

liquid crystal sealed between the pair of substrates;

wherein the spacers are formed to satisfy a following inequality,

$$x/d>2\times(1/q_{60}-1/q_{20})/(1/q_{60})$$

where a distribution density of the spacers is n (cm^{-2}), an amount of displacement when a force of 9.8/n (N) is applied to one spacer is x, an average distance between the pair of substrates is d, a density of the liquid crystal at 60 ℃ is q_{60} (g/cm^3), and the density of the liquid crystal at 20 ℃is q_{20} (g/cm^3).

34. A liquid crystal display device including a TFT substrate having thin film transistors thereon, a CF substrate having color filters for a plurality of colors, and liquid crystal sealed between the TFT substrate and the CF substrate,

the TFT substrate comprising:

a transparent substrate;

the thin film transistors formed on the transparent substrate;

an insulating final protection film for covering at least the thin film transistors; and

pixels electrodes connected electrically to the thin film transistors at portions, from which the final protection film is removed, and extended onto the pixel regions;

wherein the final protection film is not interposed between the pixel electrodes and the transparent substrate in the pixel regions for at least one color out of the

plurality of colors.

35. A liquid crystal display device according to claim 34, wherein a thickness of the final protection film interposed on the pixel regions is set differently according to colors of the pixels.

36. A liquid crystal display device according to claim 34, wherein the final protection film is formed of insulating inorganic material.

37. A liquid crystal display device according to claim 34, wherein the final protection film is formed of insulating organic material.

38. A liquid crystal display device including a TFT substrate having thin film transistors thereon, a CF substrate having color filters for a plurality of colors, and liquid crystal sealed between the TFT substrate and the CF substrate,

the TFT substrate comprising:

a transparent substrate;

the thin film transistors formed on the transparent substrate;

an insulating final protection film for covering at least the thin film transistors; and

pixels electrodes connected electrically to the thin film transistors at portions, from which the final protection film is removed, and extended onto the pixel regions;

wherein a thickness of the final protection film

interposed between the pixel electrodes and the transparent substrate is set thinner than the thickness of the final protection film on the thin film transistors.

39. A liquid crystal display device according to claim 38, wherein a thickness of the final protection film interposed on the pixel regions is set differently according to colors of the pixels.

40. A liquid crystal display device according to claim 38, wherein the final protection film is formed of insulating inorganic material.

41. A liquid crystal display device according to claim 38, wherein the final protection film is formed of insulating organic material.

42. A method of manufacturing a liquid crystal display device comprising the steps of:

forming a plurality of gate bus lines on a substrate;

forming a first insulating film on an overall upper surface of the substrate to cover the gate bus lines;

forming a plurality of data bus lines on the first insulating film, and also forming thin film transistors to respond to respective pixel regions;

forming a second insulating film on an overall upper surface of the substrate to cover the thin film transistors;

exposing electrodes of the thin film transistors by selectively etching the second insulating film on the thin

film transistors, and also etching the second insulating film on the pixel regions; and

forming a conductive film on an overall upper surface of the substrate, and forming pixel electrodes in pixel regions respectively by patterning the conductive film.

43. A method of manufacturing a liquid crystal display device according to claim 42, wherein a thickness of the first insulating film or the second insulating film remained on the pixel regions is changed according to colors of pixels in the etching step.

44. A method of manufacturing a liquid crystal display device according to claim 42, wherein portions of the second insulating film over the thin film transistors are employed as spacers to maintain a cell gap.

45. A method of manufacturing a liquid crystal display device according to claim 42, wherein the second insulating film is formed of inorganic material.

46. A method of manufacturing a liquid crystal display device according to claim 42, wherein the second insulating film is formed of organic material.

47. A liquid crystal display device in which a first substrate on which a black matrix, that is formed by laminating a plurality of color filters having different colors mutually, is formed and a second substrate on which pixel electrodes are formed are stuck together with a sealing member, and then liquid crystal is injected between the first substrate and the second substrate from a liquid

crystal injection port, comprising:

columns formed of a plurality of color filters that are laminated in the liquid crystal injection port on the first substrate; and

gap holding spacers formed on the columns such that their top ends come into contact with the second substrate.

48. A liquid crystal display device according to claim 47, wherein domain defining projections made of same material as the gap holding spacers are formed on the color filters in pixel regions.

49. A method of manufacturing a liquid crystal display device comprising the steps of:

forming any one color filter out of red, green, and blue color filters in a pixel region on a first substrate respectively, forming a black matrix in regions between pixels and light-shielding regions on an outside of display regions by laminating two color filters out of the red, green, and blue color filters, and forming columns in a region acting as a liquid crystal injection port by laminating more than two color filters out of the red, green, and blue color filters on a region acting as a liquid crystal injection port;

forming domain defining projections on the color filters in pixel regions, and forming first gap holding spacers on columns that are made by laminating the color filters;

jointing the first substrate and the second substrate

to bring top ends of the first gap holding spacers into contact with the second substrate;

injecting liquid crystal between the first substrate and the second substrate via the liquid crystal injection port; and

sealing the liquid crystal injection port.

50. A method of manufacturing a liquid crystal display device according to claim 49, wherein the red, green, and blue color filters are laminated as three layers in a predetermined region in the display region, then cell gap adjusting spacers are formed simultaneously with the domain defining projections, and then top ends of the cell gap adjusting spacers are brought into contact with the second substrate when the first substrate and the second substrate are jointed to each other.

51. A method of manufacturing a liquid crystal display device according to claim 49, wherein second gap holding spacers are formed on the black matrix on the outside of the display regions simultaneously with formation of the first gap holding spacers.

52. A method of manufacturing a liquid crystal display device according to claim 49, wherein the first gap holding spacers are formed higher than the cell gap adjusting spacers.

53. A method of manufacturing a color filter substrate for a liquid crystal display device, comprising the steps of:

forming any one color filter out of red, green, and blue color filters in a pixel region on a first substrate respectively, forming a black matrix in regions between pixels and light-shielding regions on an outside of display regions by laminating two color filters out of the red, green, and blue color filters, and forming columns in a region acting as a liquid crystal injection port by laminating more than two color filters out of the red, green, and blue color filters on a region acting as a liquid crystal injection port; and

forming domain defining projections on the color filters in pixel regions, and forming gap holding spacers on columns that are made by laminating the color filters.